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Species limits in *Diaporthe*: molecular re-assessment of *D. citri*, *D. cytospora*, *D. foeniculina* and *D. rudis*

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previous article



view table of contents

next article



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Abstract

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Article Media

Metrics

Suggestions

Species of *Diaporthe* are important plant pathogens of a wide range of hosts worldwide. In the present study the species causing melanose and stem end rot diseases of *Citrus* spp. are revised. Three species of *Diaporthe* occurring on *Citrus* are characterised, including *D. citri*, *D. cytospora* and *D. foeniculina*. Morphology and phylogenetic analyses of the complete nuclear ribosomal internal transcribed spacer regions and partial sequences of actin, beta-tubulin, calmodulin and translation elongation factor 1- α were used to resolve species on *Citrus* and related *Diaporthe* species. *Diaporthe citri* occurs on *Citrus* throughout the *Citrus*-growing regions of the world. *Diaporthe cytospora* is found on *Citrus* in Europe and California (USA). *Diaporthe foeniculina*, including the synonym *D. neotheicola*, is recognised as a species with an extensive host range including *Citrus*. *Diaporthe medusaea*, a name widely used for *D. citri*, was determined to be a synonym of *D. rudis*, a species with a broad host range. *Diaporthe citri* is delimited based on molecular phylogenetic analysis with the inclusion of the conserved ex-type and additional collections from different geographic locations worldwide. *Diaporthe cytospora*, *D. foeniculina* and *D. rudis* are epitypified, fully described and illustrated with a review of all synonyms based on molecular data and morphological studies. Newly designed primers are introduced to optimise the amplification and sequencing of calmodulin and actin genes in *Diaporthe*. A discussion is provided of the utility of genes and the need for multi- gene phylogenies when distinguishing species of *Diaporthe* or describing new species.

Keywords: EPITYPIFICATION; GENEALOGICAL SORTING INDEX; MELANOSE; MULTI-GENE PHYLOGENY; NEW PRIMERS; PHOMOPSIS; SPECIES RECOGNITION; STEM END ROT; SYSTEMATICS

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